

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1 – 39. (Canceled)

40. (New) An orthogonal frequency division multiplex (OFDM) telecommunication device comprising:

a plurality of analog devices together configured and adapted for sequentially performing, in either order, an analog multiplication and an analog convolution on an analog signal,

wherein said analog multiplication of said analog signal provides down-conversion of an RF analog signal at a radio frequency into an IF analog signal at an intermediate frequency.

41. (New) The OFDM telecommunication device of claim 40,
wherein said telecommunication device is an orthogonal frequency division multiplex receiver.

42. (New) The OFDM telecommunication device of claim 40,

wherein said plurality of analog devices are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

43. (New) The OFDM telecommunication device of claim 42,
wherein said plurality of analog devices are together configured and adapted for performing a further analog multiplication for said Fourier transformation on said analog signal.

44. (New) The OFDM telecommunication device of claim 40,
wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and
said plurality of analog devices are configured and adapted for performing said multiplication and said convolution as operations for an inverse Fourier transformation for an OFDM modulation.

45. (New) The OFDM telecommunication device of claim 40,
wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and
said plurality of analog devices are configured and adapted for performing, in either order, a second analog multiplication and a second analog convolution on a second analog signal,

wherein said second analog multiplication of said second analog signal provides up-conversion of an IF analog signal at an intermediate frequency into an RF analog signal at a radio frequency.

46. (New) An orthogonal frequency division multiplex (OFDM) telecommunication device comprising:

a first analog device; and

a second analog device,

wherein said first analog device is configured and adapted for receiving an RF analog signal at a radio frequency, performing an analog multiplication as well as an RF/ IF down-conversion thereon and outputting a resultant IF analog signal at an intermediate frequency to said second analog device, and

said second analog device is configured and adapted for receiving said IF analog signal and for performing an analog convolution thereon to provide an analog output signal.

47. (New) The OFDM telecommunication device of claim 46,

wherein said telecommunication device is an orthogonal frequency division multiplex receiver.

48. (New) The OFDM telecommunication device of claim 46, comprising:

a third analog device configured and adapted for receiving, as an input signal, said analog output signal from said second analog device and for performing an analog multiplication thereon,

wherein said first, second, and third analog devices are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

49. (New) The OFDM telecommunication device of claim 46, further comprising:
an analog-to-digital converter configured and adapted for receiving, as an analog input signal, said analog output signal from said second analog device and for converting said analog input signal into a corresponding digital output signal.

50. (New) The OFDM telecommunication device of claim 49, further comprising:
a digital device configured and adapted for receiving said digital output signal and for performing a digital multiplication thereon,

wherein said first and second analog devices and said digital device are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

51. (New) The OFDM telecommunication device of claim 46, further comprising:
an antenna; and
an amplification and pre-processing circuit configured and adapted to feed an OFDM signal received by said antenna to said first analog device as said RF analog signal.

52. (New) The OFDM telecommunication device of claim 46,

wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and

said first and second analog devices are configured and adapted for performing said multiplication and said convolution as operations for an inverse Fourier transformation for an OFDM modulation.

53. (New) The OFDM telecommunication device of claim 46,

wherein said telecommunication device is an orthogonal frequency division multiplex transceiver,

said second analog device is configured and adapted for receiving an IF analog input signal at an intermediate frequency and for performing an analog convolution thereon to provide an analog IF output signal, and

said first analog device is configured and adapted for receiving said analog IF output signal, performing an analog multiplication as well as an IF/RF upconversion thereon and outputting a resultant RF analog signal at a radio frequency.

54. (New) An orthogonal frequency division multiplex (OFDM)

telecommunication device comprising:

a plurality of analog devices,

wherein said plurality of analog devices are together configured and adapted for performing, in either order, an analog multiplication and an analog convolution on an analog signal, and

said plurality of analog devices are configured and adapted for performing said multiplication and said convolution as operations for an inverse Fourier transformation for an OFDM modulation.

55. (New) The OFDM telecommunication device of claim 54,
wherein said telecommunication device is an orthogonal frequency division multiplex transmitter.

56. (New) The OFDM telecommunication device of claim 54,
wherein said plurality of analog devices are configured and adapted such that said multiplication of said analog signal provides up-conversion of an IF analog signal at an intermediate frequency to an RF analog signal at a radio frequency.

57. (New) The OFDM telecommunication device of claim 54,
wherein said plurality of analog devices are together configured and adapted for performing a further analog multiplication for said inverse Fourier transformation on said analog signal.

58. (New) The OFDM telecommunication device of claim 54,
wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and

said plurality of analog devices are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

59. (New) An orthogonal frequency division multiplex (OFDM) telecommunication device comprising:

a plurality of analog devices together configured and adapted for sequentially performing, in either order, an analog multiplication and an analog convolution on an analog signal,

wherein said multiplication of said analog signal provides up-conversion of an IF analog signal at an intermediate frequency to an RF analog signal at a radio frequency.

60. (New) The OFDM telecommunication device of claim 59,
wherein said telecommunication device is an orthogonal frequency division multiplex transmitter.

61. (New) The OFDM telecommunication device of claim 59,
wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and

said plurality of analog devices are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

62. (New) An orthogonal frequency division multiplex (OFDM)

telecommunication device comprising:

a first analog device; and

a second analog device,

wherein said first analog device is configured and adapted for receiving an analog signal and performing an analog convolution thereon to provide an intermediate analog signal,

said second analog device is configured and adapted for receiving said intermediate analog signal and for performing a multiplication thereon to provide an analog output signal, and

said first and second analog devices are configured and adapted for performing said multiplication and said convolution as operations for an inverse Fourier transformation for an OFDM modulation.

63. (New) The OFDM telecommunication device of claim 62,

wherein said telecommunication device is an orthogonal frequency division multiplex transmitter.

64. (New) The OFDM telecommunication device of claim 62,

wherein said intermediate analog signal is an IF analog signal at an intermediate frequency and said multiplication of said intermediate analog signal provides up-conversion thereof to an RF analog signal at a radio frequency.

65. (New) The OFDM telecommunication device of claim 62, further comprising:

a third analog device situated upstream on a signal path comprising said first and second analog devices, said third analog device being configured and adapted for performing an analog multiplication on an analog signal,

wherein said first, second, and third analog devices are configured and adapted such that said multiplications and said convolution provide said inverse Fourier transformation for an OFDM modulation.

66. (New) The OFDM telecommunication device of claim 62, further comprising:

a digital-to-analog converter configured and adapted for converting a digital input signal into a corresponding analog output signal and for outputting said analog output signal to said first analog device as said analog signal.

67. (New) The OFDM telecommunication device of claim 66, further comprising:

a digital device configured and adapted for performing a digital multiplication on a digital signal and for outputting a resultant digital signal to said digital-to-analog converter as said digital input signal,

wherein said first and second analog devices and said digital device are configured and adapted such that said multiplications and said convolution provide said inverse Fourier transformation for an OFDM modulation.

68. (New) The OFDM telecommunication device of claim 62,

wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and

said first and second analog devices are configured and adapted for performing said multiplication and said convolution as operations for a Fourier transformation for an OFDM demodulation.

69. (New) An orthogonal frequency division multiplex (OFDM) telecommunication device comprising:

- a first analog device; and
- a second analog device,

wherein said first analog device is configured and adapted for receiving an IF analog signal at an intermediate frequency and performing an analog convolution thereon to provide an intermediate IF analog signal,

said second analog device is configured and adapted for receiving said intermediate IF analog signal, for performing a multiplication as well as an IF/RF up-conversion thereon and outputting a resultant RF analog signal at a radio frequency.

70. (New) The OFDM telecommunication device of claim 69,

wherein said telecommunication device is an orthogonal frequency division multiplex transmitter.

71. (New) The OFDM telecommunication device of claim 69,

wherein said telecommunication device is an orthogonal frequency division multiplex transceiver, and

said first and second analog devices are configured and adapted for performing
said multiplication and said convolution as operations for a Fourier transformation for an OFDM
demodulation.